

## TECHNOLOGY TRANSFER: INNOVATIVE SOLUTIONS IN MEDICINE, 2017

## 1. Introduction

In spite of the involvement of DM type 2 to pathogenesis of anatomic endocrinological section, actually, DM type 2 is an ensemble psychosomatic disease and its communication reached the point of epidemic [1].

Pathocharacteristic changes are denoted by a number of researches as complications of DM type 2 [2]. It is also noted that personality changes can precede diabetes to DM type 2. For example, many people with DM type 2 are characterized by the presence of alexithymia [3]. Certain personality traits such as alarming, anancastic and dependent personality traits are classically considered as one of the factors of getting DM type 2. Therefore, the study of personality traits of patients with DM type 2 must be one of the priority directions [4].

The lack of endocrinological pathopersonological study and essential influence of pathopersonologic personality traits including acquired by DM on patients' compliance to therapy stipulates the high priority of their research and significance of evaluation of pathopersonological stratification structure among patients with DM type 2 [5].

The 'diabetic personality' hypothesis was developed in the second third of the 20<sup>th</sup> century [6].

Since then the issue of diabetic pathopersonology is rising from time to time as a top-priority one among either thyroid specialists or psychiatrists and psychologists.

**Objective:** to study the structure and dynamics of personality traits in patients with DM type 2 for using this information in patient treatment strategies.

## 2. Material and Methods

On the base of MI '10<sup>th</sup> Zaporizhzhia City Clinical Hospital' and MI 'Regional Clinical Endocrinological Dispensary' of Zaporizhzhia Regional Council there was a research, in which 543 patients with DM type two under medical treatment were examined. The average age was  $56,2 \pm 0,65$ . The patients were divided into three groups according to the severity of DM. *The first clinical group* (CG-1) of 57 patients with DM type 2 with mild case (average age  $59,1 \pm 1,1$ ). *The second clinical group* (CG-2) of 312 patients with moderately severe DM type 2 (average age  $59,1 \pm 1,1$ ). *The third clinical group* (CG-3) of 172 patients with the nasty form of DM type 2 (average age  $61,8 \pm 0,8$ ).

## CONTENT AND DYNAMICS DISCLOSURE OF PERSONALITY TRAITS OF PATIENTS WITH DIABETES MELLITUS TYPE 2 IN A CONTEXT OF DIABETIC PATHOPERSONOLOGY

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**Abstract:** Pathocharacteristic changes are denoted by a number of researches as complications of DM type 2. Certain personality traits such as alarming, anancastic and dependent personality traits are classically considered as one of the factors of getting DM type 2. The influence of pathopersonologic personality traits including acquired by DM on patients' compliance to therapy stipulates high priority of their research.

543 patients with DM type two under medical treatment were examined. The first clinical group of 57 patients with DM type 2 with mild case. The second clinical group of 312 patients with moderately severe DM type 2. The third clinical group of 172 patients with nasty form of DM type 2. We have conducted research for five years (2012–2017 years). Methods of research: anamnestic, clinical-psychopathological, psychodiagnostical, statistical.

There are established personality traits, which are predisposed by DM type 2. According to the induction risk level they are divided into such sections: section I – high risk of DM type 2 induction as one of the components of DM type 2 etiopathogenesis; section II – medium risk of DM type 2 induction; section III – low risk of DM type 2 induction.

The research established the personality peculiarities of patients with DM type 2 and on its basis the modification of personological continuum of patients with DM type 2, as the disease progresses, was concluded.

The established personality peculiarities of patients with DM type 2 can provide a basis for diabetic pathopersonology, that improves the quality of differential diagnosis of DM type 2 comorbid psychic disorders and approaches to DM type 2 therapy and psychoprophylaxis, the improvement of quality of patients' with DM type two treatment, also in a context of compliance to DM type 2 therapy correction by the leveling of discompliant personality traits.

**Keywords:** peculiarity, accentuation of personality traits, Diabetes mellitus type 2, diabetic pathopersonology, psychodiagnosis.

The study was conducted with-in five years (2012–2017 years).

Methods of research: anamnestic, clinical-psychopathological, psychodiagnostical, statistical. Under the psychopathological research the Leonhard-Schmieschek's personality accentuation test (on the basis of K. Leonhard; H. Schmieschek typology, 1970) was used to determine personality peculiarities of patients.

## 3. Results

According to the retrograde study, there was no statistical difference in prevalence of DM-type-2-determining personality traits among groups. The dominant traits were alarming (272 patients – 52,71 %), dysthimic (180 patients – 34, 88 %) (Fig. 1). These qualities are referred to traits of the first section according to risk level of DM type 2 induction, which have the high risk of DM type 2 induction as one of the components of DM type 2 etiopathogenesis.

Such traits of character accentuation as pedantic (17 patients – 13,76 %), demonstrative (66 patients – 12,76 %), labile (52 patients – 10,27 %), cycloid (38 patients – 7,36 %) are referred to the second section according to risk level of DM type 2 induction (medium risk).

According to risk level of DM type 2 induction hyperthymic, exalted, rigorous and unbalanced personality traits are referred to the third section. Actually, they weren't distinguished as risky traits, because of the prevalence under 5 %.

Under the analysis of patient's personalities of the CG-1 the following traits are distinguished: harmonious trait (5 patients – 8,77 %), most of them had an isolated accentuation of

character (36 patients, 63,16 %), the rest of patients %) had mixed accentuation of character (21 patients – 36,84 %).

Under the analysis of all dominant personality traits either isolated accentuations of character or mixed – they were distributed among patients of the CG-1 in the following way: the dominant traits among CG-1 patients were: alarming (31 patients – 54,39 %), dysthimic (25 patients – 43,86 %) and labile (20 patients – 35,09 %) ( $\chi^2=103.332$ ,  $p<0.01$ ). The rest of accentuations were prevalent far less: cycloid accentuation: 10 patients (17,54 %); pedantic: 9 patients (15,79 %); demonstrative: 6 patients (10,53 %); unbalanced: 3 patients (5,26 %); hyperthymic, exalted and rigorous – 1 patient with each (1,75 %).

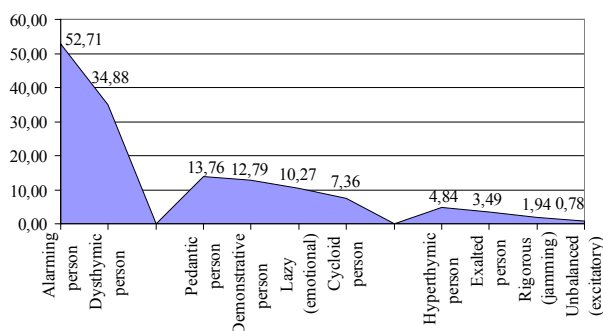


Fig. 1. The overall prevalence of DM-type-2-determining personality traits among all the groups of patients

The dynamics of characterological changes during predispositional period and among patients with DM type 2 with mild case allowed to distinguish the following peculiarities:

- the decrease of prevalence of patients with harmonious personality by 1,7 % after they were diagnosed DM type 2;
- the increase of manifestations prevalence of labile (by 24,82 %), cycloid (by 10,18 %) and dysthymic (by 8,98 %) spectra.

The representativeness of vectors of characterological changes among patients of CG-2 was the following: there were only 12 patients with DM type 2 who had harmonious trait (3,85 %). The domination of mixed accentuations of character within patients from CG-2 was significant ( $p < 0,01$ ); only 77 patients (24,68 %) were determined as having the isolated accentuations of character.

Under the analysis of all dominate personality traits among patients of CG-2 either isolated accentuations of character or mixed their prevalence was the following: The domination of alarming and dysthymic accentuations of character were significant ( $\chi^2 = 1305,234$ ,  $p < 0,01$ ); the following personality traits were less prevalent: labile (69 patients – 22,12 %), pedantic (68 patients – 21,79 %), demonstrative (49 patients – 15,71 %), exalted (28 patients – 8,97 %), hyperthymic (18 patients – 5,77 %), unbalanced (16 patients – 5,13 %), rigorous and cycloid (6 patients for each – 1,92 %).

It was spotted that the occurrence of psychoorganic syndrome had an influence on personality traits of patients with mixed accentuations of character: most of patients from CG-2 (65,38 %) and CG-3 (70,68 %) were diagnosed cognitive deterioration.

Also the dynamic of characterological changes among patients with DM type 2 depended on morbidity level – between mild case and medium severity of DM type 2:

- the decrease of patients with harmonious personality by 4,73 %;
- the lateroposition of personality manifestations from isolated accentuations of character to mixed accentuations;
- personality reforming under the influence of acquired traits of organic lesion of brain;
- the double increase of alarming accentuation type either in isolated form or in mixed – almost by 73,18 %;
- the dominant personality traits were followed by dysthymic and its prevalence increased by 24,09 %;
- the decrease of prevalence of cycloid (by 15,62 %) and labile (by 12,97 %) accentuation types.

Under the pathocharacteristic research among CG-3 it was found that: only 5 patients with the nasty form of DM type 2 (2,87 %) had harmonious personality, while the rest of patients (169 patients – 97,13 %) had pathopersonologic shifts of mixed character with different manifestation rate.

The existed personality traits were significantly different by the prevalence in CG-3 ( $\chi^2 = 753,071$ ,  $p < 0,01$ ).

Dominant (over 50 %) personality traits were alarming accentuation trait (169 patients – 54,17 %) and rigorous accentuation trait (158 patients – 50,64 %), there were a bit less patients with labile (152 patients – 48,72 %), dysthymic (132 patients – 42,31 %) and excitatory (120 patients – 38,46 %) accentuations of character. Much less such accentuation traits as: demonstrative (68 patients – 21,79 %), pedantic (45 patients – 14,42 %), exalted (15 patients – 4,81 %), cycloid (14 patients – 4,49 %), hyperthymic (2 patients – 0,64 %) were diagnosed.

The dynamic of characterological changes among patients with DM type 2 was viewed between severe and nasty DM type 2, as well as between mild and severe DM type 2:

- the dynamic of the percentage decrease of patients with harmonious personality increased by 2.24 %;
- the personality profile was fully consisted of mixed accentuations of character, isolated accentuations of character were leveled by changes caused by the disease;
- the prevalence of rigorous personality trait increased by 48,72 %.
- the ingravescence of personality reforming under the influence acquired traits of organic lesion of brain;
- the increase of prevalence of such affective personality traits as labile (by 26,60 %), unbalanced (by 33,33 %), cycloid (by 2,56 %);
- the decrease of alarming trait of accentuation of character (by 40,06 %) and dysthymic (by 25,64 %) due to substituting them by labile, unbalanced and cycloid.

The dynamic of personality traits under the influence of DM type 2 is showed systematized on Fig. 2.

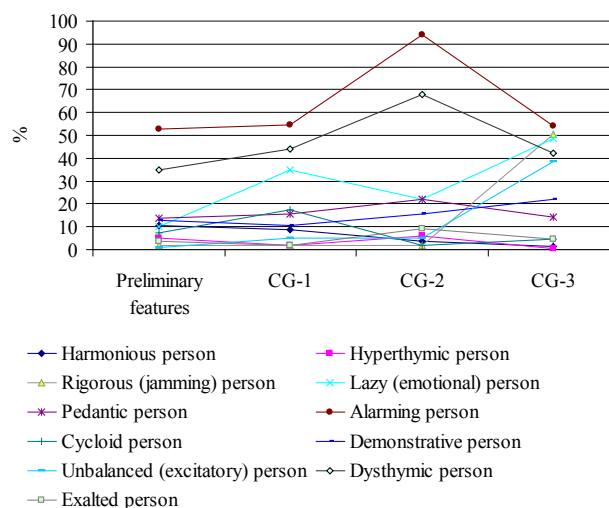


Fig. 2. The dynamic of personality traits under the influence of DM type 2

The personality traits under the influence of DM type two beginning with predisposed personality traits are following:

- progredient increase of prevalence of alarming, dysthymic, pedantic spectra to the severe DM type 2 with decrease among patients with nasty DM type 2;
- sharp increase of prevalence of rigorous and excitatory accentuation types among patients with nasty DM type 2;
- curve, that characterize the oscillation of labile and cycloid types of accentuation with increase of prevalence rate among patients with mild and nasty DM type 2 with decrease among patients with severe DM type 2.

– the increase of prevalence rate of demonstrative accentuation type among patients with nasty DM type 2 with minor decrease among patients with mild DM type 2.

The above changes are interconnected directly with emotional transmutations due to the organic lesion of brain: alarming and depressive components are substituted by more emotionally unstable labile, exalted, cycloid, demonstrative components.

#### 4. Discussion

The research confirms the current views concerning changing of personality traits of patients under the influence of DM type 2, the ingravescence of existing personality qualities to the florid accentuations of character or even psychopaties. Certain researchers noted that shift peculiarities among patients with DM type 2 are mostly presented by psychasthenic anomalies, according to current classifications including alarming, anankastic and addictive personality types [7, 8]. Also, in a bit less percentage occur patients with cycloid and epileptoid personality types, and very rare – hysteroid, asthenic and schizoid personality types [9, 10] occurred.

However, it has been proven that the spectrum of pathopsychological changes is much wider.

The DM type 2 predisposed personality traits were proven.

The proven personality traits are divided into three sections according to the DM type 2 induction risk level:

Section I – high risk of DM type 2 induction as one of the components of DM type 2 etiopathogenesis followed by alarming (52,71 %) and dysthymic (34,88 %) personality traits;

Section II – medium risk of DM type 2 induction, followed by pedantic, demonstrative, labile, cycloid personality traits with prevalence rate 5–15 %;

Section III – low risk of DM type 2 induction followed by hyperthymic, exalted, rigorous and unbalanced personality traits. Their prevalence as predisposed was lower than 5 %.

The research allowed to prove the personality peculiarities of patients with DM type 2 and to conclude about the modification of personological continuum of patients with DM type 2 on its basis, as the disease progresses.

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